REMARKS

This responds to the Office Action mailed on <u>March 20, 2006</u>.

No claims are amended.   Claims 1-28 and 30 are now pending in this application.

§102 Rejection of the Claims

Claims 1-28 and 30 were rejected under 35 U.S.C. § 102(e) as being anticipated by Qin et al. (USPN 6,594,620). This rejection is respectfully traversed. Applicant reserves the right to swear behind Qin et al., at a later date.

In the Response to Arguments section of the Final Office Action, it is stated that the recitation: "a method for identifying an event in the process" is not given patentable weight because a "preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone." Please note that the body of claim 1 does depend on the preamble for completeness. The first element recites "the process". It derives antecedent from the preamble – "identifying events in a process". Thus, the body does depend on the preamble. The third element clearly states that events occurring are determined, and it is clear that the events refer back to the process as cited in the preamble, which includes identifying events in a process.

The Final Office Action also "notes the difference between the cited prior art and the applicant's invention". Since the preamble should be given patentable weight, and the Examiner indicates that there are differences, the rejection should be withdrawn, and the claims allowed.

Even if the preamble is not given patentable weight, all claim limitations must be met by the art to establish a prima facie case of anticipation. The current claim elements make it clear that events in a process are being found. The first element describes using sensor data from the process in a model, and the remaining elements describe using the model to determine if events are occurring. Thus, events are clearly related to the process, even if the preamble is not considered.

Independent claim 16 is written in means plus function format, which means that the structure described in the specification that accomplishes that function, plus reasonable equivalents should be how the claim is interpreted. The specification describes that events in a process are identified. Thus, claim 16 clearly contains the differences over the prior art that were mentioned by the Examiner.

Independent claim 30 even recites that a process event is identified in the last element. Thus, it also contains the difference noted by the Examiner. The Office action indicates that Qin et al., describes finding a nearest cluster of bad actors related to the process event to identify the process event as claimed at Col. 3, lines 10-13. These lines "determine whether a detection alarm is due to one or more faulty sensors,..." and uses "a series of detectors are constructed which are insensitive to one subset of faults but most sensitive to the others" to identify the offending sensor. This language clearly does not relate to an event in a process, but appears to refer to finding structured residuals that are not sensitive to one set of faults but more sensitive to others. This is an entirely different approach to a very different problem. It should be noted that the present application refers to events as process parameters being out of range in one or more parts of the process. The claim 30 is not directed specifically at identifying a bad sensor, but rather identifying an event in the process, as clearly recited in the elements of the claim.

Claim 30 further recites that events are determined as occurring "as a function of one or more process states being outside of normal range". This element even more clearly distinguishes Qin et al., as it specifically refers to process states, not to sensors that are malfunctioning. Since a prima facie case of anticipation has not been established the rejection should be withdrawn.

The Final Office Action also relies on identical rejections as the previous Office Action. As such, the Applicant's remarks with respect to such rejections are repeated now.

The presently claimed invention is directed at "identifying events in a process". These are very different purposes, and the claims are believed to clearly distinguish the reference.

Claim 1 recites "determining if an event is occurring". This event is related to the process, not specifically to identifying a bad sensor as in Qin et al. The Office Action indicates this element is in Qin et al., at Col. 3, lines 10-13. These lines "determine whether a detection

alarm is due to one or more faulty sensors,…" and uses "a series of detectors are constructed which are insensitive to one subset of faults but most sensitive to the others" to identify the offending sensor. This language clearly does not relate to an event in a process, but appears to refer to finding structured residuals that are not sensitive to one set of faults but more sensitive to others. This is an entirely different approach to a very different problem. It should be noted that the present application refers to events as process parameters being out of range in one or more parts of the process. The present claims are not directed specifically at identifying a bad sensor, but rather identifying an event in the process as stated in the preamble of each independent claim.

Claim 1 also recites "finding a nearest cluster of bad actors related to the event to identify the event." The Office Action sites the same section of Qin et al., at Col. 3, lines 10-13 as describing this element. As seen from the above quoted langauge, it does not describe finding a cluster of bad actors related to a process event, but instead finds structured residuals to identify an offending sensor. Thus, Qin et al., is lacking at least two elements of independent claims 1 and 16.

Dependent claim 2 recites that clusters of bad actors are compared to known clusters in a library of clusters for bad actors. As known from claim 1, these clusters are related to process events. No such clusters are found in the language referenced in the Office Action, Qin et al., Col. 2, lines 60-63. Such language clearly refers to optimizing the reconstruction of faulty sensor values, not identifying events occurring in the process. As such, the element is not taught by Qin et al., and the rejection should be withdrawn.

Dependent claims 3-5 refer to sequences of cluster matches. The Office Action refers to Col. 6, lines 29-41 as describing this element. However, this language only refers to calculating diagnostic information as to the type of sensor fault. It does not deal with events in a process as claimed, and any time sequences are related to a sensor, not to sequences of clusters of bad actors as claimed. The Office Action also indicated that claim 4 is shown at Col. 19, lines 1-2 which recite: "Goodness of fit of the regression line is determined by the linear correlation coefficient exceeding a specified threshold." Applicant fails to see how this language shows or suggests claim 4, which recites "determining if a cluster needs to be split when new bad actors are added; and splitting the cluster into two clusters using a goodness of fit algorithm." The only

correlation is the use of goodness of fit algorithm, but the algorithm is used in very different manners. The language of Qin et al., clearly does not anticipate claim 4. Also, the reference to Qin et al., with respect to claim 5 does not appear to anticipate. Claim 5 refers to determining if new event categories are encountered and broadening limits for a sequence of clusters. Col. 5, lines 30-41 simply refers to calculating residuals and residual transforms. There is no discussion in the Office Action of how this seemingly unrelated langauge teaches any part of claim 5.

Similarly, language cited in Qin et al., with respect to claims 6-15 also appear to have little to do with the claimed invention since Qin et al., is directed to detecting faulty sensors, and not events in a process as claimed. Claims 17-28 which depend from claim 16, are similar to claims that depend from claim 1, and distinguish the reference for at least the same reasons.

As Qin et al., does is lacking one or more elements of the claims, a proper prima facie case of anticipation has not been established, and the rejections should be withdrawn.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6905 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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